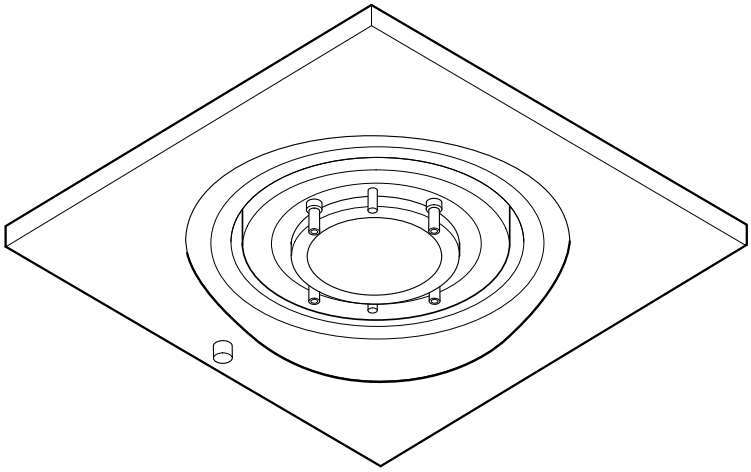
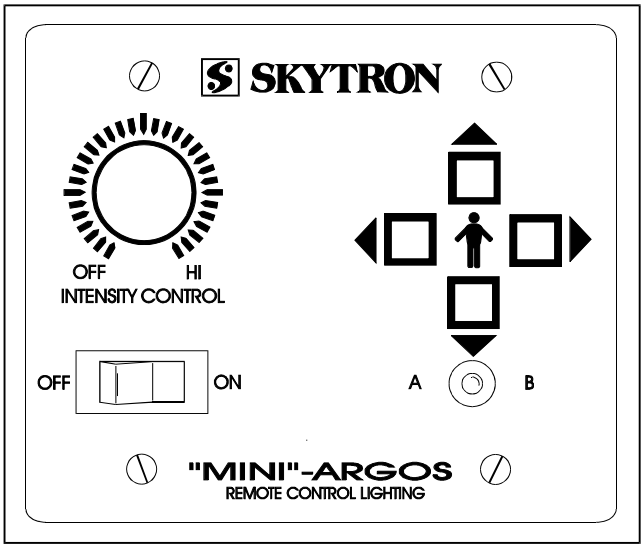
SKYTRON

INSTALLATION INSTRUCTIONS





HA60AR-WC MINI-ARGOS

REMOTE CONTROLLED SURGICAL LIGHT

6/05

EQUIPMENT LABELS AND SPECIFICATIONS

ATTENTION, CONSULT MANUAL FOR FURTHER INSTRUCTIONS.
INDICATES SPECIAL USER ATTENTION.

INDICATES DANGEROUS VOLTAGE, 120 V, 60 Hz

AC VOLTAGE, CONTINUOUS OPERATION

F1 FUSE TYPE 1 AMP, SLOW BLOW TYPE

F2 FUSE TYPE 1/4 AMP, SLOW BLOW TYPE

V VOLTAGE RATING OF THE UNIT

A AMPERAGE RATING OF THE UNIT

HZ FREQUENCY OF THE UNIT

FOR DRY LOCATIONS
UNIT TO BE USED ONLY IN SPECIFIED ENVIRONMENTAL CONDITIONS
TEMPERATURE: 15˚ - 30˚ C (60˚ -85˚ F)
HUMIDITY: 30% - 60% RELATIVE HUMIDITY, NON CONDENSING

ELECTRICAL SPECIFICATIONS

POWER REQUIREMENTS -- 120VAC, 60HZ 100W, SINGLE PHASE
CURRENT LEAKAGE -- LESS THAN 100 MICRO AMPS
INPUT VOLTAGE TO FIXTURE NOT TO EXCEDE 3% NOMINAL VOLTAGE

ENTELA CERTIFIED
TO UL2601-1
CAN/CSA601.1, IEC 60601-2-46

US C entela® Certified

WARNING

Pay close attention to wiring diagrams and wire color coding. Incorrect wiring may result in High Voltage (120VAC) being supplied to Low Voltage circuits. This WILL DAMAGE internal circuitry and components VOIDING WARRANTY.

INSTALLATION CLEARANCES

To prevent damage to the light fixture the following minimum clearances must be maintained:

1. Centers of adjacent (two or more) fixtures: 3 feet

2. Top of fixture and overhead building member: 5 inches.

3. Fixture center to side wall: 1-1/2 feet.

WARNING

Risk of FIRE. DO NOT install insulation within 3 inches of fixture sides nor above fixture in such a manner to entrap heat.

INSTALLATION INSTRUCTIONS

1. Loosen cover thumbscrew, open cover and remove three screws securing light assembly to housing. See figure 1.

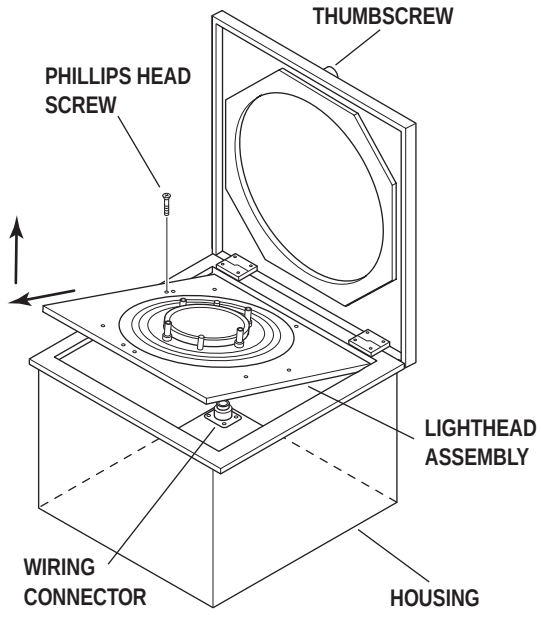


Figure 1.

2. Lift lighthead up and towards you. Remove assembly from housing. Disconnect wiring connector from housing before removing lighthead assembly completely.

3. After the connector is disconnected, set the lighthead aside on edge to avoid damaging the circuit boards or front face.

CAUTION

Remove all protective shipping material from lighthead assembly and verify that all circuit boards are in place.

NOTE

Failure to follow mounting structure guidelines may result in poor performance.

4. Check mounting structure details (on back page) and install housing onto threaded rod.

NOTE

Threaded rod must not extend more than 1 inch inside housing to prevent interference with light assembly movement.

5. Align lighthead housing front cover thumbscrew as shown in figure 2 for proper lighthead/wall control orientation.

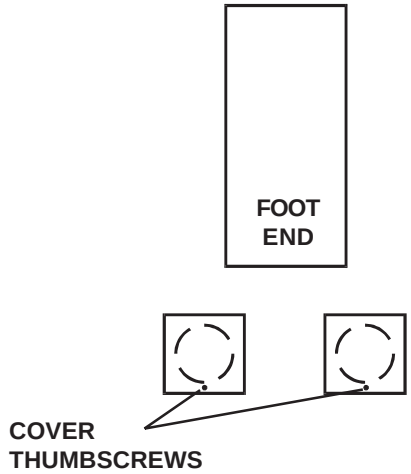
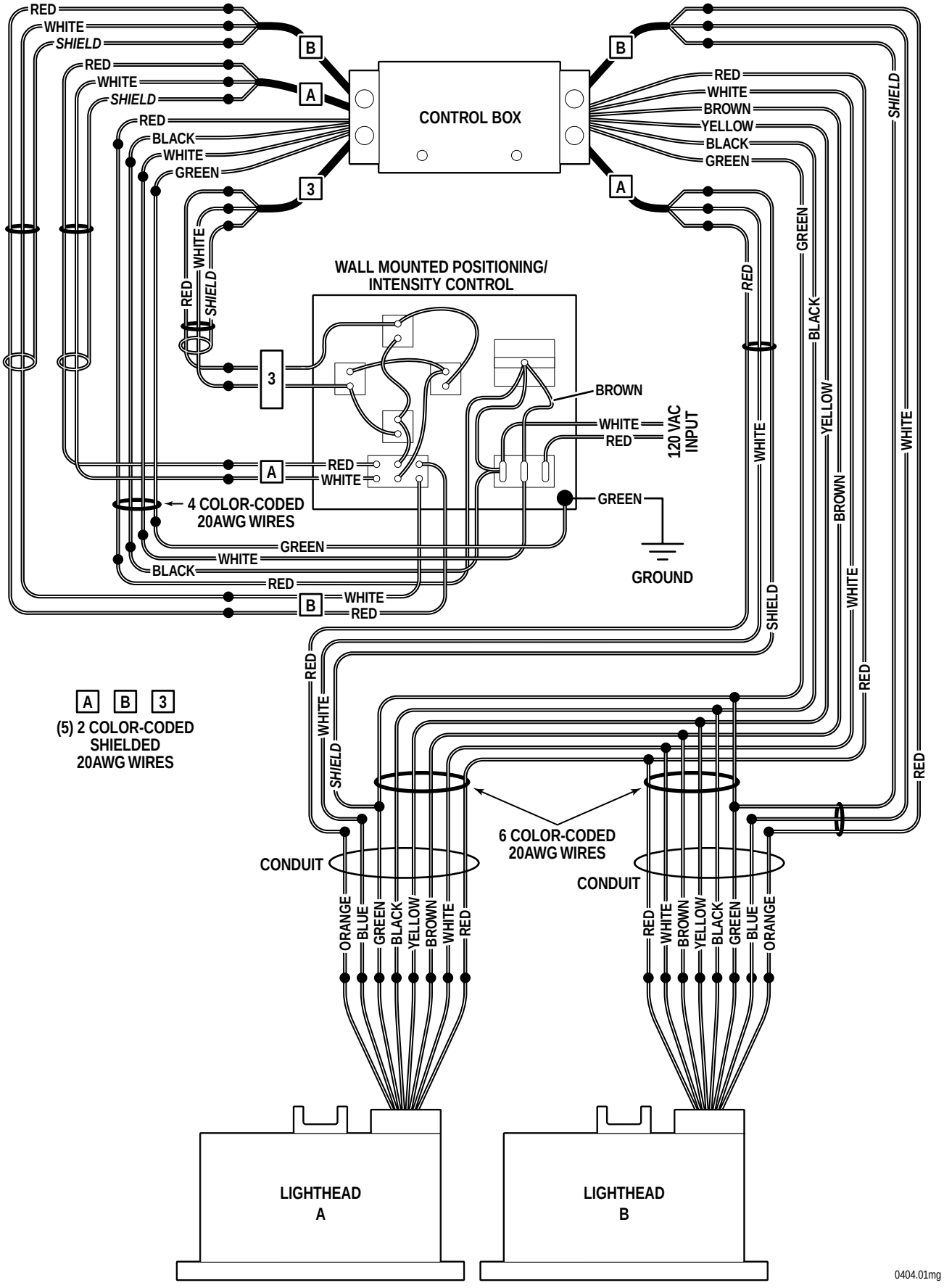


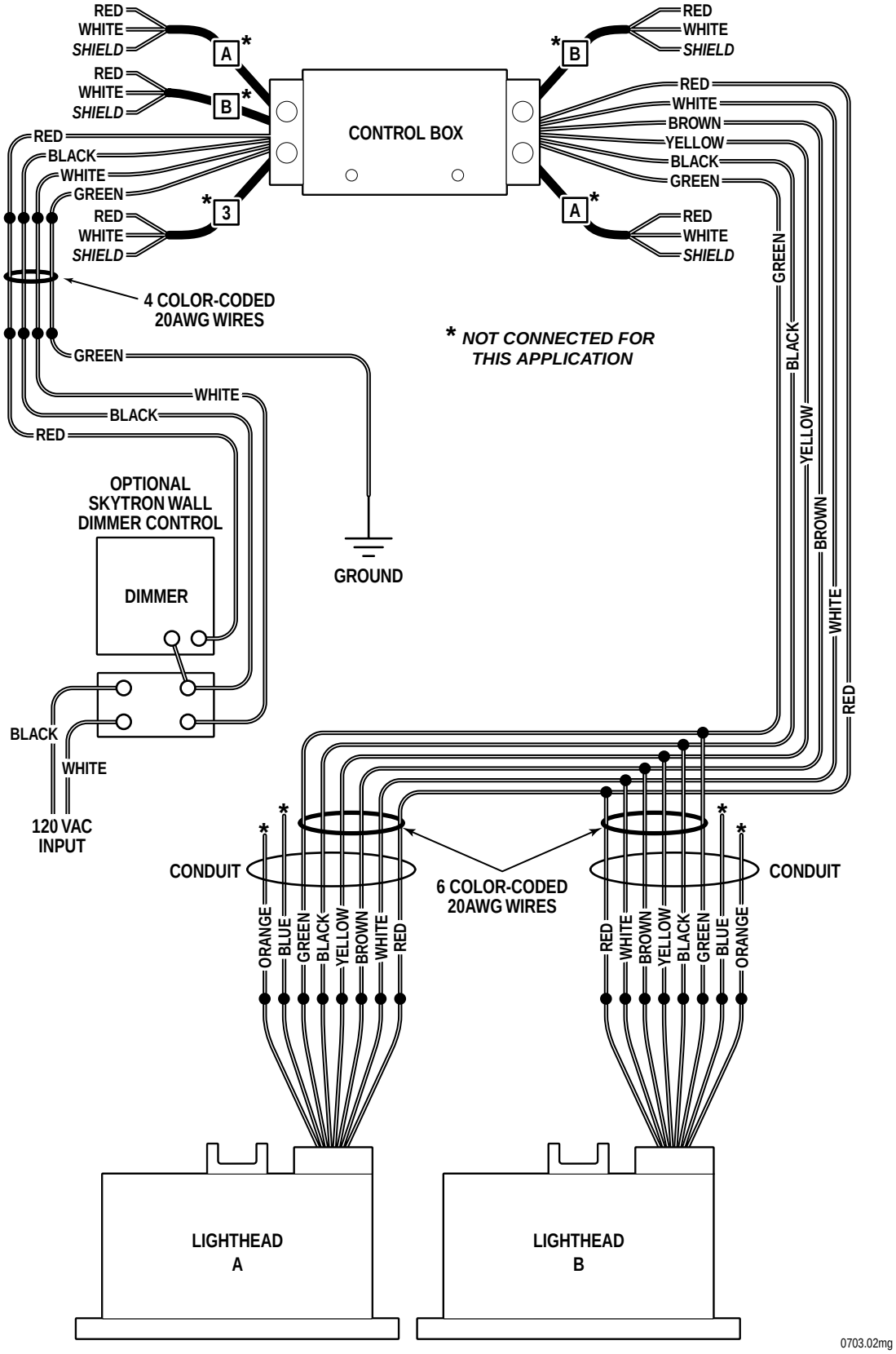
Figure 2. Lighthead Orientation (Birthing Room Application)

HA60AR-WC FIXTURE WIRING



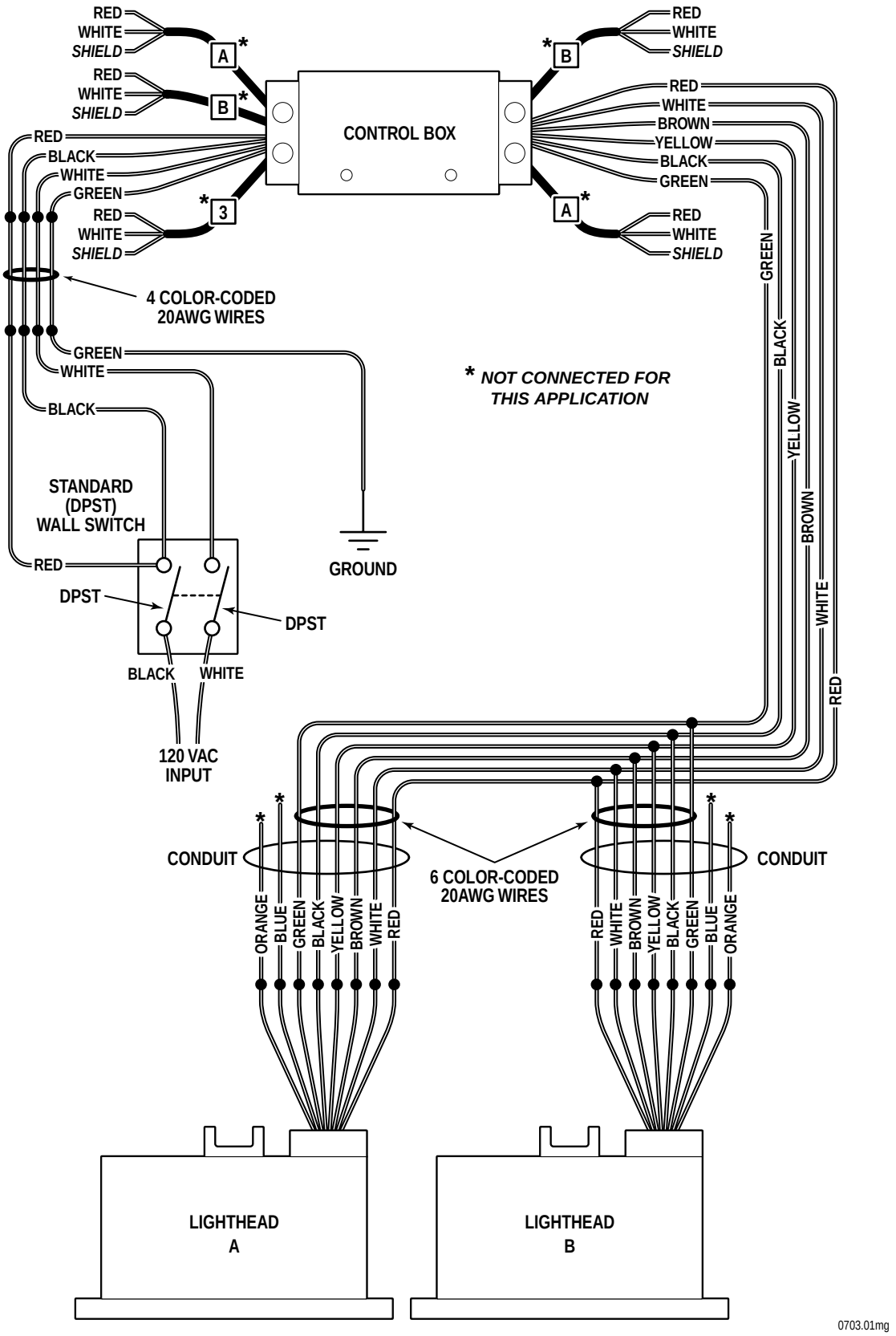
A dedicated circuit with a 20A Circuit Breaker is required for proper operation.

HA60AR-WC OPTIONAL SKYTRON DIMMER CONTROL FIXTURE WIRING



A dedicated circuit with a 20A Circuit Breaker is required for proper operation.

HA60AR-WC STANDARD (DPST) WALL SWITCH FIXTURE WIRING



A dedicated circuit with a 20A Circuit Breaker is required for proper operation.

CAUTION

Wires from wall control positioning circuit are low voltage and must be shielded cable. At the lighthead junction box, connect Red wire from shielded cable to Orange wire, connect White wire from shielded cable to Blue wire and connect cable shield to the Green wire.

6. Connect the 8 color coded wires from the lighthead housing junction box (through conduit) to control box junction box as shown in figure 3. Observe wire colors carefully and make all wire connections using wire nuts.

7. Install wiring connector, reinstall the lighthead assembly in housing and secure with three screws.

8. Observe wire color codes and connect wires from wall control to control box using wire nuts. Shielded cable is required for mobility circuit between wall control and control box. See figure 3. Wall control; requires a minimum 2-3/4" deep triple (4" x 6") switch box. Wiring to control box requires 4 color coded wires and (3)- 2-wire shielded cables, all 20AWG.

CAUTION

Use 20 AWG wire MINIMUM. Make all wire connections with wire nuts.

9. Using caution not to damage the dimmer switch assembly on the back of the control panel, install wall control mounting plates and wall control as shown on back cover.

CAUTION

Remove circuit boards from control box and test wire connections. WARRANTY does not cover electrical damage caused by incorrect wire connections.

BULB VOLTAGE ADJUSTMENT

To insure maximum intensity and to prolong bulb life, the voltage to the bulb should be 20VAC. Use the following procedure to test and adjust the bulb applied voltage.

1. Bulb voltage must be tested with the bulb illuminated using a true RMS voltmeter. Due to limited space at the base of the bulb for meter test leads, 2 small wires attached to the bulb prongs will simplify the test.

2. Remove the diffuser and remove the bulb. Attach two small wires to the prongs of the bulb and reinstall the bulb. Connect the 2 wires to the meter test leads.

3. Turn main power "ON" and set the Dimmer Control to maximum intensity for the test. Output voltage (at the bulb) should be 20V. See figure 4.

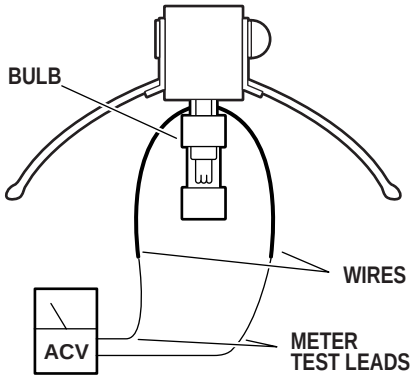
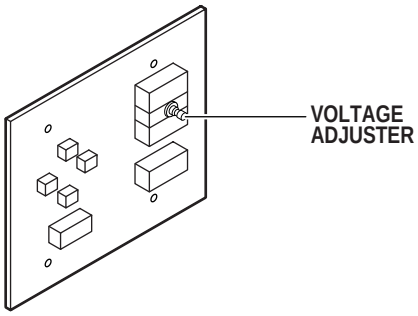


Figure 4.

4. Adjust the voltage to the bulb by turning the adjuster on the voltage control. See figure 5.



Back Side of Wall Control

Figure 5.

5. Turn the adjuster clockwise to increase the output voltage, counterclockwise to decrease the voltage. Proper voltage should be 20V.

NOTE

To ensure proper performance use Skytron supplied bulbs ONLY. P.N. B5-011-32.

MOBILITY CIRCUIT TEST

When all interconnecting wiring is complete and the light output test has been conducted, perform the following:

1. Review all wiring between wall control, control box & fixture

2. Install circuit boards

3. Apply 120v to wall control.

4. Perform voltage tests at lighthead junction box.

LIGHTHEAD JUNCTION BOX TEST

WIRE COLORS		VOLTAGE
	HIGH VOLTAGE	
Red & White	=	120 VAC
	LOW VOLTAGE	
Yellow & Brown	=	+15 VDC
Yellow & Black	=	-15 VDC
Yellow & Orange	=	+15 VDC with Foot Button Actuated
	=	-15 VDC with Head Button Actuated
Yellow & Blue	=	+15 VDC with Left Button Actuated
	=	-15 VDC with Right Button Actuated

Lighthead Housing Connector

PIN #	WIRE COLOR
1	Green
2	White
3	Red
4	Brown
5	Yellow (mobility circuit common)
6	Black
7	Not Used
8	Not Used
9	Orange
10	Blue

CAUTION

Fixture has a thermal protection device. Blinking light may indicate heat build-up due to improper installation clearances.

NOTE

Depending on length of 1/2 inch threaded rod and finish ceiling construction, some fixture movement may be noticed during operation. If so, shims may need to be added between finished ceiling and housing to prevent side movement of the fixture.

REMOTE ON/OFF SWITCH CONNECTION

To connect a remote ON/OFF switch-foot control to a Skytron Model HA60AR-WC fixture, the following wiring connection is recommended, to avoid any problems with the fixture mobility circuits.

Connect the switching device to the RED bulb circuit wire at either the Control Box output side Junction Box (mounted above the ceiling), or at the Lighthead Junction Box. See figure 6.

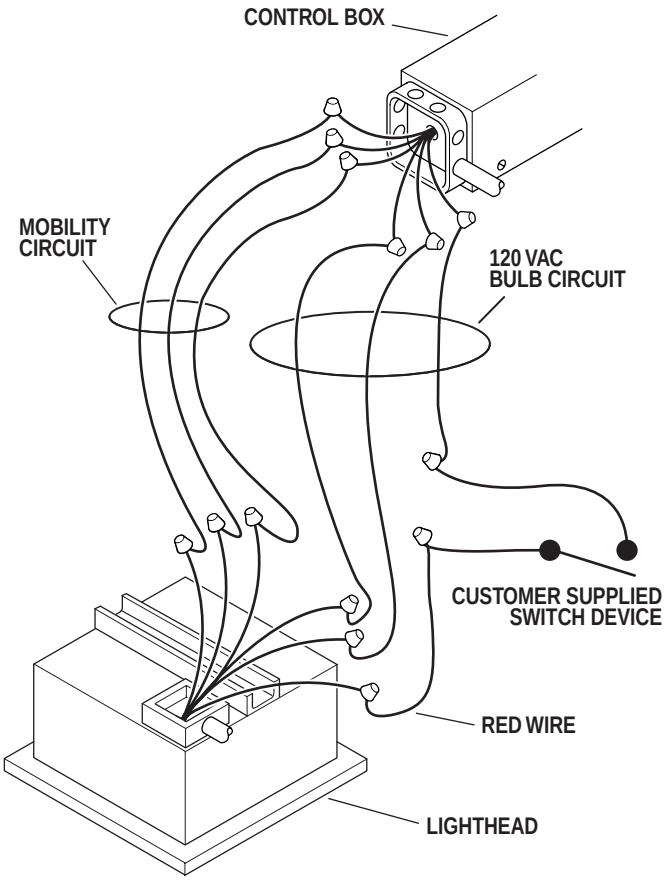


Figure 6.

DAMAGED SHIPMENT CLAIM PROCEDURE

Whenever a shipment suffers damage while in the custody of the transportation company, the responsibility lies with the transportation company, and the value of the damages can be collected from the transportation company if the proper procedures are followed.

When a shipment is received in a damaged condition and due to the appearance of the containers such as a broken crate, torn wrapping, or smashed carton, the contents may have been damaged. That fact should be noted on the Bill of Lading offered by the transportation company. An example of an applicable statement would be; "Received in good order except as noted" or "Crate damaged, possibility of concealed damage." The addition of these types of statements on the shipping documents will automatically give grounds for starting a claim.

If damage cannot be identified on the exterior of the container, but is found when the container is opened, further unpacking should be stopped immediately and the container with all wrapping or packing materials should be held. The transportation company should be notified so an inspector can be sent. Failure to follow either of these two procedures may result in an inability to file a claim and collect for damage done. Returning the container to the sender without such an inspection may prevent filing a claim, because it will divide the responsibility for damage and in many cases the transportation company will return the shipment to the sender without charge after the inspection.

The claim itself may be filed by either the shipper or consignee, but the consignee must notify the transportation company and the shipper that the damage has occurred. Remember that refusal of the shipment or failure to note the possibility of damage on the shipping documents may jeopardize the claim. Also, acceptance of a damaged shipment which has been processed properly to allow for filing a claim, will not jeopardize the position of the consignee. In any case, SKYTRON will see that damage which is not the fault of the consignee or his agents is corrected, if the transportation company does not honor the claim, as long as SKYTRON receives the full cooperation of the consignee in filing the claim.

Some of the papers needed for filing a claim are in the hands of the consingnee after the shipment has been received. If SKYTRON must file a claim, we will request these papers by name from the consignee at such time as the claim is under discussion. We will require the originals of these papers and not copies.

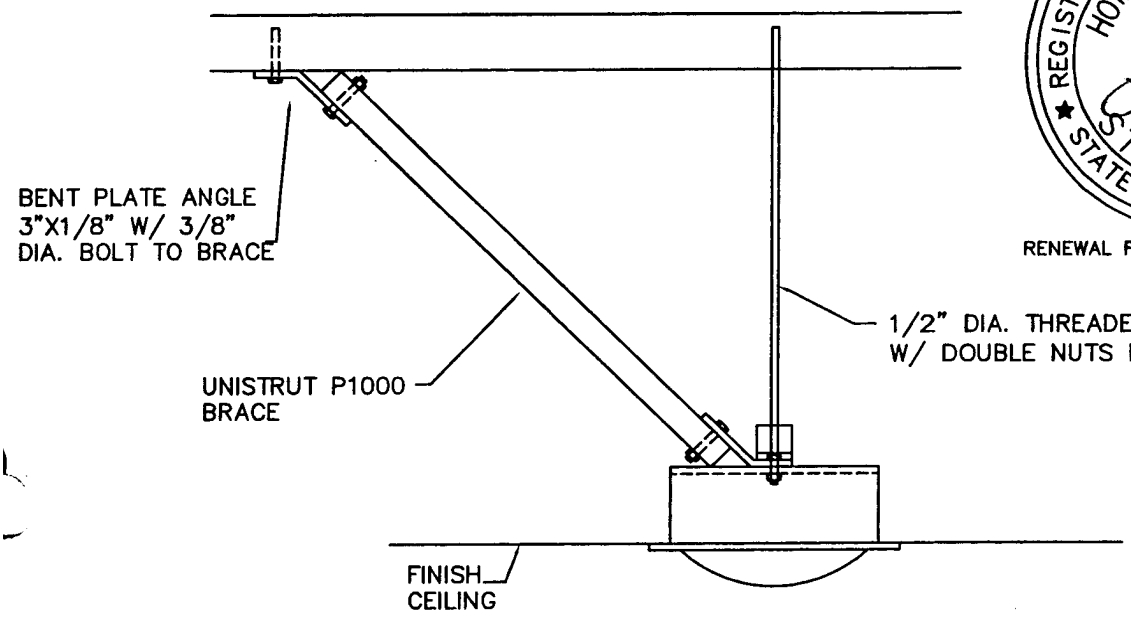
Knowledge of the procedures outlined above and your cooperation in submitting damaged shipment claims will help both you, our customer, and SKYTRON by assuring the integrity of our products from manufacturing to installation.

FIROUZI CONSULTING ENGINEER, INC.		
SKYTRON SURGICAL PRODUCTS	DES.	SHEET
ARGOS SERIES - HA60AR-WC FOR SEISMIC ZONE (4), SOIL PROFILE (Sd) NEAR SOURCE FACTOR = 1.5	FCE JOB No. DATE: 6-30-03	1 OF 3 SHEETS

SEISMIC ANCHORING BOLT DESIGN
ARGOS SERIES - HA60AR-WC

REGISTERED PROFESSIONAL ENGINEER
HOMAYOUN J. KHADVI
No. 2798
6.30.03
STRUCTURAL
STATE OF CALIFORNIA

RENEWAL FEE DUE DATE: 06-30-06



ELEVATION

NOTES:

1. SCOPE OF WORK: -DESIGN OF BOLTS CONNECTING MOUNTING PLATE TO STRUCTURE ONLY.
2. FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE – SECTION 1632A, (INCLUDING UP TO DATE REVISIONS) AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE
3. FORCES ARE MAXIMUMS AND OCCUR WHEN EQUIPMENT IS MOVED TO ITS MOST ECCENTRIC POSITION.
4. PROVIDE CEILING STRUCTURE DESIGNED AND DETAILS TO SUPPORT WEIGHTS AND FORCES SHOWN (BY ENGINEER OF RECORD FOR THE BUILDING)
5. ENGIINEER OF RECORD TO DESIGN, DETAIL AND VERIFY STRUCTURE AND/ OR EXISTING LIGHT SUPPORT TRACTS TO SUPPORT INDICATED LOADS
6. HORIZONTAL FORCES AND MOMENT MAY OCCUR IN ANY DIRECTION, ACTING AT THE TOP OF MOUNTING PLATE.

FIROUZI CONSULTING ENGINEER, INC.		
SKYTRON SURGICAL PRODUCTS	DES.	SHEET
ARGOS SERIES - HA60AR-WC FOR SEISMIC ZONE (4), SOIL PROFILE (Sd) NEAR SOURCE FACTOR = 1.5	FCE JOB No. DATE: 6-30-03	2 OF 3 SHEETS

DESIGN CRITERIA:

FORMULA 32A-1: $F_P = 4.0\ Ca*Ip*Wp$

TABLE 16A-Q : $Ca = 0.44*Na = 0.44*1.5 = 0.66$ (For zone 4 & S_D)

TABLE 16A-K : Ia = 1.5 (For essential facility)

$\therefore F_P = (4.0)(0.66)(1.5)Wp = 3.96\ Wp$ (For LRFD)

$F_P = 3.96Wp/1.4 = 2.83Wp$ (For ASD)

FORMULA 30A-1: $E = p*E_h + E_v$

$E_h = F_P$

p = 1.0 (FOR COMPONENT)

$E_v = (0.5)Ca*Ip*Wp$

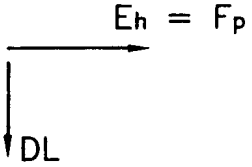
$= (0.5)(0.66)(1.5)Wp = 0.5Wp$ (For LRFD)

$= 0$ (For ASD)

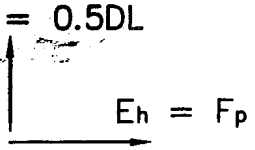
SECTION 1630A.11: $E_v = (0.7)Ca*I*Wp$

$= (0.7)(0.66)(1.5)/1.4 = 0.5Wp$ (For ASD) [NET UPLIFT FORCE]

LOAD COMBINATION CASE A



LOAD COMBINATION CASE B



BY COMPARISION LOAD, COMBINATION A GOVERNS

FIROUZI CONSULTING ENGINEER, INC.		
SKYTRON SURGICAL PRODUCTS	DES.	SHEET
ARGOS SERIES - HA60AR-WC FOR SEISMIC ZONE (4), SOIL PROFILE (Sd) NEAR SOURCE FACTOR = 1.5	FCE JOB No. DATE: 6-30-03	3 OF 3 SHEETS

Wt = 25 #
Ve = 0.50 x 25 = 12.4 #
He = 2.83 x 25 = 70.7 #

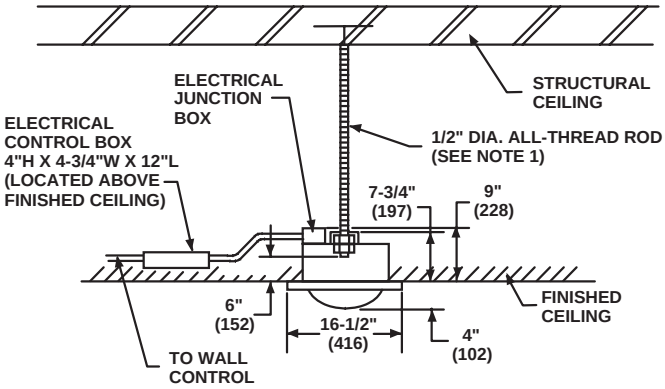
SHEAR: S = 70.7 / 1 = 71 #
TENSION: t = (25 + 12)/ 1 = 37 #

CHECK 1/2" DIA. A307 THREADED ROD:

ALLOWABLE TENSION: 3000#
ALLOWABLE SHEAR: 2000#

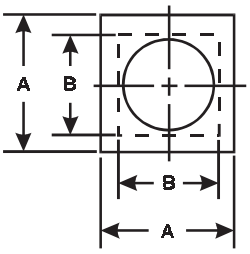
fv/Fv + ft/Ft = 0.04 + 0.01 = 0.05 < 1.0 OK

USE 1/2" DIA. THREADED ROD



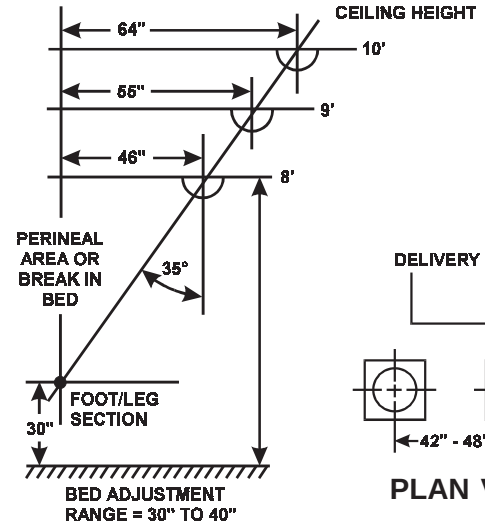
NOTES:

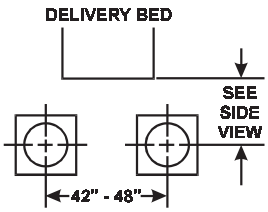
1. 1/2" Diameter support rod centered in fixture opening for total support of light. All labor and materials for fabrication. 1/2" nuts and washers (2 each required) for fixture attachment, contractor supplied.
2. All wiring, conduit and other electrical materials as well as installation labor for the SKYTRON light fixture to be provided by electrical contractor. All installations of SKYTRON lighting fixtures should be under the direct supervision of a SKYTRON service representative.
3. All wiring to be in accordance with local codes. 120VAC.
4. Wall Control requires minimum 2-3/4" deep 4" x 6" triple switch box (Appleton M3-350 or equivalent).
5. Wall Control to Control Box wiring requires 4 color coded 20AWG wires and 3 two-wire shielded cables, 20AWG. Control Box to each lighthead wiring requires 6 color coded 20AWG wires and 1 two-wire shielded cable, 20AWG. Shielded
6. Cable SKYTRON supplied.



A - 16-1/2"
B - 14"

SIDE VIEW **MOUNTING STRUCTURE GUIDELINE** **PLAN VIEW**

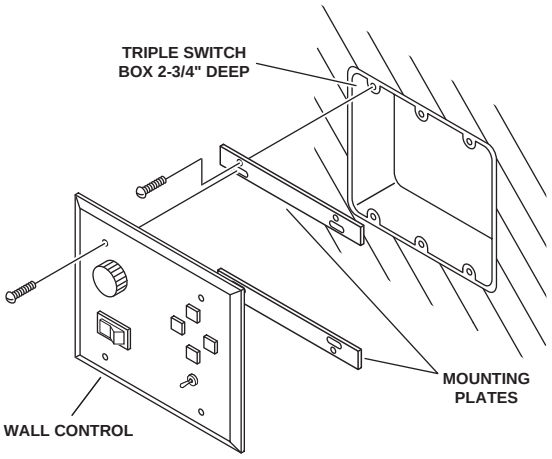




PLAN VIEW

SIDE VIEW

BIRTHING ROOM APPLICATION



WALL CONTROL INSTALLATION

SPECIFIC SEISMIC CALCULATIONS ARE AVAILABLE AS APPLICABLE. PLEASE REFER TO ENCLOSED SPECIFICATIONS.

SKYTRON
5000 36th Street S.E. • Grand Rapids, MI 49512
1.800.SKYTRON • 1.616.957.0500 • FAX 1.616.957.5053